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Intraoperative analgesia for day-care surgery: practice trends

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Short Report

Intraoperative analgesia for day-care surgery: Practice trends

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Abstract

Our objective was to determine the trends of providing intraoperative analgesia for day-care surgery among the various anaesthesiologists at our university hospital. All patients having surgical procedures under general anaesthesia in the Surgical Day Care Unit (SDC) of the Hospital were included. The study was done over two months and 142 patients were enrolled during the study period. Of these 45% received pethidine for intraoperative analgesia, 24% pethidine and ketorolac, 6% pethidine and paracetamol suppositories, 18% received fentanyl, 2% tramadol and 5% received other analgesic combinations. Of the 22% patients who received pethidine intraoperatively needed rescue analgesia in recovery room, while 12% of those receiving a combination of pethidine and ketorolac needed rescue analgesia. Pethidine was found to be the most commonly used analgesic agent while a combination of pethidine and ketorolac was found to provide a superior quality of analgesia with a lesser need of additional analgesia.

Introduction

With ongoing advancement in anaesthetic techniques and introduction of minimally invasive surgeries, day care surgical procedures are growing in quantity and complexity of operative procedures.[1] Going home on the day of surgery makes the hospital experience less traumatic and more acceptable for the patient.[2] With this increase in case load, it is important to maintain a high quality of care and ensure patient satisfaction. One of the key components of successful day-care surgery is effective control of pain after the operation.[3] Despite recent advances in therapy for acute postoperative pain, a large proportion of patients continue to experience distressing pain after day-care surgery.[4]

Opioid analgesics, when used perioperatively, may cause many side effects, especially nausea and vomiting, which cause patient discomfort and may lead to delayed discharge or even hospital admission.[5] Therefore other analgesic modalities like nerve blocks, nonsteroidal anti-inflammatory drugs (NSAIDs) and paracetamol should be considered, with or without low dose opioids.[6] Postoperative pain control should be started intraoperatively by supplementing general anaesthesia with adequate analgesics.[6] This will lead to an easier and smoother control of postoperative pain. The blockade of pain sensation before the painful stimulus, limits central sensitization and decreases analgesic requirements.[7] Good intraoperative analgesia will also lead to an easier and smoother control of postoperative pain. A multimodal approach to pain relief is recommended for the day-case surgical patients, consisting of short acting opioids, NSAIDs, local anaesthesia and paracetamol.[6-9] This has shown to decrease the requirement for opioids and their related side effects.[9] The use of such combinations is superior to any single modality.[7,8] Day-care surgery is gaining popularity in Pakistan and Amjad and Fazal[9] have studied the beneficial role of multimodal pain management strategy in patients undergoing mini cholecystectomy on a day-care basis. After a systematic review of available evidence, Payne and colleagues were unable to make evidence-based recommendations about the preferred choice of analgesia because of the wide variation in practice.[10]

In this study we determined the trends of providing intraoperative analgesia for day-care surgery among the various anaesthesiologists at our university hospital. We also determined the need for additional analgesia in the post anaesthesia care unit. This study is meant to serve as an initial step to determine the variation in practice amongst the different anaesthesiologists. At a later study we plan to conduct a multicenter study and then to employ our results combined with a review of the available evidence to prepare guidelines and recommendations about the preferred choice of analgesics for day-care patients amongst the various available analgesic agents, in an endeavour to improve the service.

Methods and Results

Day-care surgeries are performed in the surgical day care (SDC) operating rooms at our hospital, which are situated separately from the main operating rooms. This greatly simplified the selection process for the study and all patients having their operations performed in the SDC operating rooms under general anaesthesia on a day-care basis were included in this study. It was a prospective observational study and was conducted over a period of two months, between May 1, 2006 and June 30, 2006. After giving consent for surgery and anaesthesia, the patients received routine anaesthetic management as planned by the

consultant anaesthesiologist managing the patient. Patients on regular analgesics preoperatively and those unable to communicate or understand instructions were excluded from the study. The surgical specialties included ophthalmology, general surgery, ear, nose, throat (ENT) surgery, and a few cases of plastic surgery.

The patient's demographic characteristics, surgical specialty, and duration of surgery were recorded on a standardized form. The premedication given and intraoperative analgesia used were noted by one of the researchers. The patients were followed up in the post anaesthesia care unit (PACU) by one of the researchers on arrival, after 30 minutes and after 60 minutes and the pain scores were assessed and noted. Additional analgesia provided in the PACU, presence or absence of vomiting, and duration of stay in the PACU was also noted.

The data was entered and verified using the statistical software SPSS version 13.0 and the same software was also used to analyze the data. Proportions were calculated for all categorical variables. A total of 142 patients received general anaesthesia on a day-case basis in the SDC unit by seven different consultant anaesthesiologists during the study period of two months. There were 67% [95/142] were males and 33% [47/142] females. Pre-medication was given to 92% [130/142] patients. The surgical procedures included 30% [43/142] ENT surgery, 20% [28/142] ophthalmic surgery and the remaining 50% [71/142] various general surgical procedures such as herniorrhaphy, excision biopsy, and peripheral limb surgery. The duration of 71% [100/142] of the procedures was one hour, 26% [37/142] lasted two hours and 3% [5/142] lasted more than two hours.

Intravenous pethidine for intraoperative analgesia was given to [64/142] patients, 24% [35 patients] received a combination of intravenous pethidine and ketorolac, 18% [25 patients] had intravenous fentanyl, 6% [8/142] received a combination of intravenous pethidine and paracetamol suppositories, 2% [3/142] were given intravenous tramadol and 5% [7/142] received one of these combinations with infiltration of local anaesthetics.

Of the patients who received fentanyl, 32% [8/125] needed additional analgesia on arrival in PACU, whereas those, 22% [14/64] who were given pethidine alone intraoperatively required additional analgesia in PACU. Of the patients who received a combination of pethidine and ketorolac, only 12% [4/35] needed analgesia in the PACU. Two [25%] of the patients who received a combination of intravenous pethidine and paracetamol suppositories required additional analgesia. The number of patients who received other medications was too low to provide meaningful analytic data in this respect.

Fourteen (10%) patients had postoperative nausea and vomiting (PONV) in PACU. Incidence of PONV was similar with all opioid agents used. However, PONV was more common after ophthalmic surgery [32% or 5/14]. All patients were discharged to the day-care ward within one hour of their arrival in the PACU.

Conclusion

Our study demonstrated variations in the selection of intraoperative analgesics by different consultant anaesthesiologists for patients undergoing common day-care surgical procedures. The variation observed in our study was not as much as that mentioned in other reviews (see introduction), probably because of the limitation in choice of analgesic agents available as compared to the western world.

This study found pethidine to be the most commonly used analgesic agent [107 out of 142 patients] and a combination of pethidine and ketorolac provided a superior quality of analgesia with a lesser need of additional analgesia in the post anaesthesia care unit. Use of a combination of analgesic modalities is considered superior, as mentioned above, and this was also reflected in our study where the combination of pethidine and ketorolac showed better analgesic efficacy. The lack of mutual consensus about the best choice of analgesia for day-care patients provides a challenge in the development of evidence based guidelines. Regular and frequent assessment of postoperative pain intensity and its prompt management is important for satisfactory pain relief after day-care surgery. Appropriate documentation will allow the day surgery unit to perform audits to analyze and confirm the adequacy of pain management techniques and to make appropriate guidelines and recommendations.

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